







1: Mol Gen Genet. 1981;183(1):181-6.

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Altered transcriptional termination in a rifampicin-resistant mutant of Escherichia coli which inhibits the growth of bacteriophage T7.

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Schwarz TF, Yeats SM, Connolly P, McConnell DJ.

A spontaneous rifampicin-resistant mutant of E. coli K12, RpoB26, which inhibits the growth of bacteriophage T7 has been isolated. The mutation is an RNA polymerase mutation; it also restores the wild-type effect of polar mutations in a rho-deficient strain, probably by restoring transcriptional termination. The efficiency of plating (e.o.p.) of wild-type T7, and of some early region deletion and point mutants of T7 tested, is reduced on RpoB26 by a factor of 10(-4). However, some deletion mutants are inhibited more severely (up to 10(-7) on RpoB26. We argue that these differences may reflect variations in the frequency of transcriptional termination before gene 1, an essential gene which codes for the T7 RNA polymerase (Summers and Siegel 1970; Chamberlin et al. 1970). We also present data which suggest that the product of a late T7 gene plays a role, by some interaction with the product of gene 1, in the inhibition of T7 in RpoB26. We suggest that different levels of expression of gene 1 may lead to different degrees of inhibition of T7 strains in RpoB26.

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